## REMARKS

In the Office Action,[1] the Examiner:

(a) rejected claims 1-3, 5, 8-12, 14, 16, and 18-19 under 35 U.S.C. § 103(a) as being unpatentable over Hafeez et al. (U.S. Patent No. 6,920,191) ("Hafeez") in view of Wei et al. (U.S. Patent No. 7,272,176) ("Wei"); and

(b) rejected claims 6-7, 15, 17, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Hafeez in view of Wei, and further in view of Shattil (U.S. Patent Publication No. 2002/0034191) ("Shattil").

Applicants respectfully traverse the rejections for at least the following reasons.

**Rejection of Claims 1-3, 5, 8-12, 14, 16, and 18-19 under 35 U.S.C. § 103(a):**

Applicants traverse the rejection of claims 1-3, 5, 8-12, 14, 16, and 18-19 under 35 U.S.C. § 103(a) as being unpatentable over Hafeez in view of Wei. No *prima facie* case of obviousness has been established.

The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. Such an analysis should be made explicit and cannot be premised upon mere conclusory statements. *See M.P.E.P. § 2142, 8th Ed., Rev. 6 (Sept. 2007).* "A conclusion of obviousness requires that the reference(s) relied upon be enabling in that it put the public in possession of the claimed invention." *M.P.E.P. § 2145.* Furthermore, "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art" at the time the invention was made. *M.P.E.P. § 2143.01(III), internal*

[1] The Office Action may contain statements characterizing the related art, case law, and claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Office Action.

*citation omitted.* Moreover, "[i]n determining the differences between the prior art and the claims, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious." *M.P.E.P. § 2141.02(I),* internal citations omitted (emphasis in original).

"[T]he framework for objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q 459 (1966).... The factual inquiries ... [include determining the scope and content of the prior art and] ... [a]scertaining the differences between the claimed invention and the prior art." *M.P.E.P. § 2141(II).* "Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art." *M.P.E.P. § 2141(III).*

Here, a *prima facie* case of obviousness has not been established because the Office Action has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the claimed invention and the prior art. Accordingly, the Office Action has failed to clearly articulate a reason why the prior art would have rendered the claimed invention obvious to one of ordinary skill in the art.

Claim 1 calls for a combination including, for example, "[a] signal processing method comprising: ... extracting an approximation of the pulse shaping distortion from the first signal to obtain a second signal; and processing the second signal to obtain a user signal; wherein extracting comprises applying an equalization between the second signal and a third signal corresponding to the first signal, the third signal including no pulse shaping distortion and consisting only of binary code division multiple access

(CDMA) codes," (emphasis added). The cited references fail to teach at least this element of claim 1.

The Examiner correctly stated that "Hafeez et al did not explicitly disclose a third signal in the extracting step" (Office Action, p. 3). Therefore, Hafeez cannot teach "extracting comprises applying an equalization between the second signal and a third signal corresponding to the first signal, the third signal including no pulse shaping distortion and consisting only of binary code division multiple access (CDMA) codes," as recited in claim 1.

Wei does not cure Hafeez's deficiencies. Wei discloses a method for estimating a transmitted signal "using an equalizer and the received wireless signal" (ABSTRACT). However, Wei does not teach or suggest "extracting [an approximation of the pulse shaping distortion,] compris[ing] applying an equalization between the second signal and a third signal corresponding to the first signal, the third signal including no pulse shaping distortion and consisting only of binary code division multiple access (CDMA) codes," as recited in claim 1.

The Examiner alleged that "Wei et al discloses ... [t]he equalizer is applied between the second signal (818 in Fig. 8) and a third signal (interpreted as output of the adaptive algorithm block 822) corresponding to the first signal (the received signal 804), the third signal including no pulse shaping distortion and consisting only of binary code division multiple access (CDMA) code (Col 9, L54 - Col 10, L19)" (Office Action, p. 3). However, this is not correct.

According to Fig. 8 of Wei, the output of the adaptive algorithm block 822, which the Examiner interpreted as the "third signal" recited in claim 1, is the signal 826 shown

in Fig. 8. Wei teaches "[t]he adaptive algorithm component 822 updates the equalizer filter weights 826 that are used by the equalizer 810" (Col. 10, Lines 23-25, emphasis added). One of ordinary skill in the art of signal processing would understand that "filter weights" specify no more than merely a plurality of coefficients used by an equalizer. Therefore it is not correct to interpret the equalizer filter weights 826 as the "third signal[, which] ... consist[s] only of binary code division multiple access (CDMA) codes," as recited in claim 1.

Furthermore, even if it is assumed that the signal 818 may be interpreted as the "second signal" recited in claim 1 and the equalizer filter weights 826 may be interpreted as the "third signal" recited in claim 1, as alleged by the Examiner, Wei does not teach "applying an equalization between the second signal and [the] third signal," as recited in claim 1. According to Fig. 8 of Wei, the equalizer filter weights 826 are inputted to the equalizer 810, and the signal 818 is outputted from the despreading component 816, which is coupled to the equalizer 810 via a PN descrambling component 814. However, this does not constitute applying an equalization between the signal 818 and the equalizer filter weights 826.

Furthermore, claim 1 recites "extracting [an approximation of the pulse shaping distortion] comprises applying an equalization between the second signal and a third signal corresponding to the first signal, the third signal including no pulse shaping distortion and consisting only of binary code division multiple access (CDMA) codes" (emphasis added). For example, in embodiments in Applicants' specification (e.g., para. [027] - [030]), the pulse shaping distortion is the outstanding distortion that is to be separated from other types of distortions. Moreover, in such embodiments, a received

signal may include a pulse shaping distortion and a channel distortion, and the pulse shaping distortion may be separated from the channel distortion, by performing the steps recited in claim 1. In such embodiments, by "extracting ... the pulse shaping distortion from the first signal [and] applying an equalization between the second signal and a third signal [that has] no pulse shaping distortion," as recited in claim 1, the desired signal transmitted through a channel may be obtained more accurately.

However, Wei does not specify "the pulse shaping distortion" recited in claim 1. Wei even does not mention how to treat pulse shaping. One of ordinary skill in the art of signal processing would understand that the equalizer 810 taught by Wei may not extract the approximation of the pulse shaping distortion from signals that include different types of distortions. Accordingly, Wei does not teach or suggest "extracting [an approximation of the pulse shaping distortion, which] comprises applying an equalization between the second signal and a third signal corresponding to the first signal, the third signal including no pulse shaping distortion and consisting only of binary code division multiple access (CDMA) codes," as recited in claim 1.

Therefore, contrary to the assertion of the Examiner, neither Hafeez nor Wei, nor any combination thereof, teaches "[a] signal processing method comprising: ... extracting an approximation of the pulse shaping distortion from the first signal to obtain a second signal; and processing the second signal to obtain a user signal; wherein extracting comprises applying an equalization between the second signal and a third signal corresponding to the first signal, the third signal including no pulse shaping distortion and consisting only of binary code division multiple access (CDMA) codes," as recited in claim 1 (emphasis added).

In view of the shortcomings of the prior art and the errors in analysis of the prior art set forth in the Office Action, the Office Action has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the claimed invention and the prior art. Moreover, there is no motivation for one of ordinary skill in the art to modify the references to achieve the claimed combinations. Thus, the Office Action has failed to clearly articulate a reason why the prior art would have rendered the claimed invention obvious to one of ordinary skill in the art. Accordingly, no *prima facie* case of obviousness has been established. Independent claim 1 is therefore allowable, and dependent claims 2, 3, 5, and 8 are also allowable at least by virtue of their dependence from base claim 1. The 35 U.S.C. § 103(a) rejection of claims 1-3, 5, and 8 is therefore improper and should be withdrawn.

Independent claims 9 and 18, although different in scope from claim 1 and from each other, recite elements similar to claim 1 and are thus allowable for at least the reasons discussed above with respect to claim 1. Dependent claims 10-12, 14, 16, and 19 are also allowable at least by virtue of their dependence from one of base claims 9 and 18. The 35 U.S.C. § 103(a) rejection of claims 9-12, 14, 16, and 18-19 is therefore improper and should be withdrawn.

**Rejection of Claims 6-7, 15, 17, and 20 under 35 U.S.C. § 103(a):**

Applicants traverse the rejection of claims 6-7, 15, 17, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Hafeez in view of Wei, further in view of Shattil. No *prima facie* case of obviousness has been established.

Claims 6 and 7 depend upon base claim 1. As explained above, neither Hafeez nor Wei, nor any combination thereof, teaches "[a] signal processing method

comprising: ... extracting an approximation of the pulse shaping distortion from the first signal to obtain a second signal; and processing the second signal to obtain a user signal; wherein extracting comprises applying an equalization between the second signal and a third signal corresponding to the first signal, the third signal including no pulse shaping distortion and consisting only of binary code division multiple access (CDMA) codes," (emphasis added), as recited in claim 1 and required by claims 6 and 7.

Shattil fails to cure the deficiencies of Hafeez and Wei. The Examiner alleged that "Shattil discloses a wireless communication system comprise[s] an approximate solution that is obtained from a first-order perturbation calculation ([0678])" (Office Action, p. 7). However, whether this allegation is correct or not, neither Hafeez nor Wei, nor Shattil, nor any combination thereof, teaches "extracting comprises applying an equalization between the second signal and a third signal corresponding to the first signal, the third signal including no pulse shaping distortion and consisting only of binary code division multiple access (CDMA) codes," as recited in base claim 1 and required by dependent claims 6 and 7.

In view of the shortcomings of the prior art and the errors in analysis of the prior art set forth in the Office Action, the Office Action has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the claimed invention and the prior art. Moreover, there is no motivation for one of ordinary skill in the art to modify the references to achieve the claimed combinations. Thus, the Office Action has failed to clearly articulate a reason why the prior art would have rendered the claimed invention obvious to one of ordinary skill in the art. Accordingly,

no *prima facie* case of obviousness has been established. The 35 U.S.C. § 103(a) rejection of claims 6 and 7 is therefore improper and should be withdrawn.

Independent claims 9 and 18, although different in scope from claim 1 and from each other, recite elements similar to claim 1. Claims 15, 17, and 20 dependent from one of base claims 9 and 18, are thus allowable for at least the reasons discussed above with respect to claim 1. The 35 U.S.C. § 103(a) rejection of claims 15, 17, and 20 is therefore improper and should be withdrawn.

**Conclusion:**

In view of the foregoing, Applicants request reconsideration of the application and withdrawal of the rejection. Pending claims 1-3, 5-12, and 14-20 are in condition for allowance, and Applicants request a favorable action.

If there are any remaining issues or misunderstandings, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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